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(FILE 'HOME' ENTERED AT 15:00:52 ON 30 JUL 2003)

FILE 'USPATFULL' ENTERED AT 15:01:02 ON 30 JUL 2003

L1 305822 S PD>20021101  
L2 1695 S EPINEPHRIN OR ADRENALINE  
L3 244999 S MAGNESIUM  
L4 16954 S ADENOSINE  
L5 159 S L2 AND L3 AND L4  
L6 45 S L5 AND L1

=> log hold

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

6.35

6.56

SESSION WILL BE HELD FOR 60 MINUTES

STN INTERNATIONAL SESSION SUSPENDED AT 15:04:05 ON 30 JUL 2003

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AN 1977:244716 BIOSIS

DN BA64:67080

TI **PERFUSION OF ISOLATED RAT ADIPOSE CELLS MODULATION OF LIPOLYSIS BY ADENOSINE.**

AU TURPIN P; DUCKWORTH W C; SOLOMON S S

SO J CLIN INVEST, (1977) 60 (2), 442-448.

CODEN: JCINAO. ISSN: 0021-9738.

FS BA; OLD

LA Unavailable

AB Various combinations of **epinephrine**, **adenosine**, and **adenosine** deaminase were perfused through the adipocytes. Exogenous **adenosine**, 0.001-10.0  $\mu\text{M}$ , had no discernible influence upon unstimulated lipolysis; exogenous **adenosine** inhibited **epinephrine**-sensitive lipolysis in a concentration-dependent manner. Cells perfused with 0.3  $\mu\text{M}$  **epinephrine** plus 0.001  $\mu\text{M}$  **adenosine** did not show any impairment of the lipolytic response to 0.3  $\mu\text{M}$  **epinephrine** alone. **Adenosine**, 0.01  $\mu\text{M}$ , inhibited the response to **epinephrine** by 50%; response to 0.3  $\mu\text{M}$  **epinephrine** plus 0.1  $\mu\text{M}$  **adenosine** was similar to the basal rate. Perfusion with **adenosine** deaminase significantly increased basal lipolysis to 30% of the **epinephrine** response. **Adenosine** deaminase and **epinephrine** were synergistic in stimulating lipolysis to 180% of the response to **epinephrine** alone. Isolated fat cells were incubated for 30 min, and the cell-free used medium was perfused through fresh fat cells. **Epinephrine** in used medium was less effective in promoting lipolysis than **epinephrine** in fresh buffer. High-pressure liquid chromatography identified **adenosine** in the used medium. Bovine serum albumin possessed **adenosine** deaminase activity but accounted for negligible conversion of **adenosine** to inosine. **Adenosine** had a modulating effect upon basal and hormone-stimulated lipolysis in the

perfusion system. Sufficient endogenous **adenosine** ( $< 0.01 \mu\text{M}$ ) is present to maximally affect basal lipolysis. Hormone-stimulated lipolysis, although inhibited somewhat by endogenous **adenosine**, requires the addition of exogenous **adenosine** for complete inhibition.

L5 ANSWER 10 OF 40 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
AN 1995:263117 BIOSIS  
DN PREV199598277417

TI Effects of extracellular magnesium and beta adrenergic stimulation on contractile force and magnesium mobilization in the isolated rat heart.

AU Howarth, Frank C.; Waring, John; Hustler, Brenda I.; Singh, Jaipaul (1)

CS (1) Cell Communication Group, Dep. Applied Biol., Univ. Central Lancashire, Preston PR1 2HE UK

SO Magnesium Research, (1994) Vol. 7, No. 3-4, pp. 187-197.  
ISSN: 0953-1424.

DT Article

LA English

SL English; French

AB This study investigates the metabolism of the divalent cation, magnesium (Mg-2+) in the isolated perfused Langendorff's rat heart and ventricular slices in the absence and presence of catecholamines including isoprenaline, noradrenaline and adrenaline. **Perfusion** of the isolated rat heart with a physiological salt solution containing elevated extracellular Mg-2+ (Mg-2+)-o (2.4 mM-6.0 mM) resulted in a marked and progressive decrease in the amplitude of contraction compared to control (Mg-2+)-o (1.2 mM). In contrast, **perfusion** of hearts with low (0-0.6 mM) (Mg-2+)-o caused a small transient increase in the amplitude

of contraction which was often accompanied by arrhythmic activity.

**Perfusion** of the heart with a nominally Mg-2+ free medium resulted in a time-dependent net efflux of Mg-2+ reaching a steady state after approximately 40-50 min of **perfusion**. This release of Mg-2+ was associated with a concurrent decrease in total heart Mg-2+. Stimulation

of the heart with the beta adrenergic agonist, isoprenaline (10<sup>-7</sup> M) caused large increases in net Mg-2+ efflux which was associated with marked increases in both rate and the amplitude of contraction. Similar effects on Mg-2+ efflux were also observed during **perfusion** of the heart with the adenylate cyclase activator, forskolin (10<sup>-5</sup> M). Superfusion of paced ventricular segments with either isoprenaline, adrenaline or noradrenaline (all 10<sup>-6</sup> M) also resulted in a marked transient net efflux of Mg-2+. Pre-treatment of segments with the beta adrenergic antagonist, propranolol (10<sup>-5</sup> M) competitively blocked the Mg-2+ efflux evoked by the catecholamines. Similarly, pre-treatment of segments with the calcium (Ca-2+) channel blocker, verapamil (10<sup>-5</sup> M) caused a significant (P lt 0.05) decrease in net Mg-2+ efflux evoked by isoprenaline. The results of this study indicate that (1) the perturbation of (Mg-2+)-o has an important influence on myocardial contractility and (2) the mobilization of Mg-2+ in the heart is associated with beta adrenergic stimulation possibly via an elevation in intracellular **adenosine** 3,5 cyclic monophosphate (cyclic AMP).

2 ANSWER 36 OF 37 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
AN 1974:114473 BIOSIS  
DN BA57:14173  
TI GAMMA GLOBULIN CONTAMINATION OF **COMMERCIAL** BOVINE  
**ALBUMIN**.  
AU SIMMONS A; JONES J; HENDRIX D  
SO TRANSFUSION (PHILA), (1973) 13 (3), 142-145.  
CODEN: TRANAT. ISSN: 0041-1132.  
FS BA; OLD  
LA Unavailable

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L9 ANSWER 826 OF 840 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
AN 1971:113860 BIOSIS  
DN BA52:23860  
TI IDENTIFICATION OF **ALBUMIN** BOUND **FATTY-ACIDS**  
AS THE MAJOR FACTOR IN SERUM INDUCED LIPID ACCUMULATION BY CULTURED  
CELLS.  
AU MACKENZIE C G; MACKENZIE J B; REISS O K; WISNESKI J A  
SO J LIPID RES, (1970) 11 (6), 571-582.  
CODEN: JLPRAW. ISSN: 0022-2275.  
FS BA; OLD  
LA Unavailable

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L10 ANSWER 14 OF 26 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
AN 1981:188126 BIOSIS  
DN BA71:58118  
TI THE ROLE OF COMMERCIAL BOVINE SERUM ALBUMIN PREPARATIONS IN THE CULTURE  
OF 1 CELL RABBIT EMBRYOS TO BLASTOCYSTS.  
AU KANE M T; HEADON D R  
CS DEP. OF PHYSIOL., UNIV. COLLEGE, GALWAY, IRELAND.  
SO J REPROD FERTIL, (1980) 60 (2), 469-476.  
CODEN: JRPFA4. ISSN: 0022-4251.  
FS BA; OLD  
LA English  
AB Normal bovine serum albumin (BSA) in a complete medium without energy substrates promoted growth of 1-cell embryos to hatched blastocysts. Defatted charcoal-treated BSA did not promote growth to the blastocyst stage but the addition of pyruvate or palmitic and oleic acids allowed blastocyst growth but not blastocyst hatching. Sodium dodecyl sulfate-gel electrophoresis showed that both the normal and defatted BSA samples were heavily contaminated by proteins other than albumin. Normal BSA fractionation on Sephadex G-200 indicated that the property of promoting complete blastocyst hatching was not due to the albumin but was associated with the higher MW fraction of the BSA. Normal BSA extraction with chloroform appeared to destroy the hatching-promoting ability as neither the residue after extraction nor defatted BSA to which the organic extractate had been added promoted complete blastocyst hatching. Evidently, commercial BSA may have at least 2 effects on blastocyst growth: energy provision via **albumin-bound fatty acids** and promotion of blastocyst hatching by a non-albumin component.

36, 34, 32, 31, 29, 10

28, 25, 23, 21, 19, 10

25, 14, 10, 6

L18 ANSWER 6 OF 32 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
AN 1996:266438 BIOSIS  
DN PREV199698822567  
TI Effects of free fatty acids on the binding of bovine and human serum  
**albumin** with **steroid** hormones.  
AU Watanabe, Sadao (1); Sato, Toshiaki  
CS (1) Kanagawa Prefectural Public Health Lab., 52-2 Nakao-cho, Asahi-ku,  
Yokohama 241 Japan  
SO Biochimica et Biophysica Acta, (1996) Vol. 1289, No. 3, pp. 385-396.  
ISSN: 0006-3002.  
DT Article  
LA English  
AB Recent studies have shown that, in addition to free **steroid**  
hormones, those **bound** to albumin in plasma may also be available  
to tissues. In this report, the effects of free fatty acids (FFA) on the  
binding of **steroids** to albumin were compared for the cases of  
bovine serum albumin (BSA) and human serum albumin (HSA). The apparent  
association constant, K-a, was estimated from the changes in the  
equilibrium partition coefficient of **steroids** between the  
aqueous/hexane phases caused by the addition of albumin to the aqueous  
phase. In the case of BSA, K-a for progesterone and testosterone  
increased  
upon binding of FFA (myristic, palmitic and stearic acid) to BSA and the  
maximum value of K-a for these **steroids** could be attained by 3-4  
mol of FFA **bound** per mol BSA. Furthermore, the elution profiles  
of gel-filtration chromatography clearly showed that progesterone and  
testosterone are easily liberated from the **steroid**/BSA complexes  
and that FFA potentiates the binding of these **steroids** to BSA.  
In the case of HSA, the binding affinities of progesterone and  
testosterone were not greatly affected by **bound** FFA. On the  
other hand, the affinities of ethynylestradiol to both BSA and HSA were  
unaffected below 4 mol of FFA binding per mol.